

KENTUCKY COFFEETREE

Gymnocladus dioica (L.) K. Koch

Plant Symbol = GYDI

Contributed by: USDA NRCS Plant Materials Center, Manhattan, Kansas & Kansas State University, Research Forestry



USDA Forest Service, Northeastern Area Archives, USDA Forest Service

Alternate Names: American coffee bean, American coffee berry, American mahogany, chico du Canada, chicot, chiot, chiot tree, coffeebean, coffeebean-tree, coffeenut, coffeetree, dead tree, geweihbaum, Kentucky coffeetree, Kentucky mahogany, mahogany, mahogany-bean, nettle-tree, nicker tree, nicker tree, stump tree

Also: Gymnocladus dioica (L.) Koch

PARTS OF THIS PLANT ARE POISONOUS-See Environmental Concerns section of this document

Uses

Industry: Timber, the strong, heavy wood is used in general construction and fence posts although the rot resistant wood is soft and the staples pull out easily. Pioneer settlers used the coarse-grained, light brown to reddish-brown wood in cabinetry. Also used for ornamental purposes in large area landscape plantings and parks.

Wildlife: Kentucky coffeetree is used by nesting birds. Due to the tree's toxic plant parts such as the leaves and raw seeds, there is little wildlife usage as a source of food.

Ethnobotanic: While native to North America, Native Americans introduced the tree to some parts of the continent as they used the pulp from the wood to treat insanity. A tea was also made from the leaves and pulp and used as a laxative. Early settlers used the seeds of the tree as a substitute for coffee.

CAUTION! The seeds and pods contain the alkaloid cystisine (**Seed Environmental Concerns**). Cystisine is thought to be neutralized in the roasting process.

Conservation: Kentucky coffeetree was formerly planted around farmsteads. It is tolerant to a wide range of conditions such as drought, chalk (limestone), and urban conditions. The tree has been planted on mine spoils for soil reclamation and stabilization. This pest free tree is an alternative to ash and elm which have been ravaged by insects and disease.

Status

Kentucky coffeetree's numbers are declining rapidly due to over harvesting. The species is not invasive; it is only found in small clusters due to root sprouting and makes up a rare component of any woodland. Please consult the PLANTS Web site and your State Department of Natural Resources for this plant's current status (e.g. threatened or endangered species, state noxious status, and wetland indicator values).

Description and Adaptation

General: Legume Family (Fabaceae): A medium to large, round-barked native deciduous tree reaching heights of 60-100 feet with a spread of 40 to 50 feet. Its short trunk, 1 to 2 feet in diameter, divides into several large branches that end in contorted, stout twigs. Its unique, thick, dark bark is gray to grayish-brown, often marked with deep, irregular furrows and plates that curl at their sides. The alternate,

bipinnately compound leaves are the largest of any native species, measuring from 1 to 3 feet in length by 18 to 24 inches in width, arranged in feather-fashion in 5 to 9 pairs of pinnae, the lowest are reduced to simple leaflets. Typically the leaves consist of six to 14 entire; more or less ovate (almond shaped) leaflets, 2 to 3 inches long.

Relatively hardy in zones 3 to 8, the tree adapts well to urban conditions. It prefers full sun, humus-rich, moist soil, and tolerates drought and occasional flooding. Considering its cultural tolerances, it should be on the list of "tough" trees. Kentucky coffeetree is a fast-growing tree when young with moderate to slow growth as the tree ages attaining 12 to 14 feet in 10 years.

Establishment

Seedlings may be planted in the field after one year. Transplant balled and burlapped trees into deep, rich, moist soil for best growth.

Management

Fertilize with formulations that promote woody growth rather than excessive foliar growth. Prune in winter or early spring; wood may be somewhat brittle. Longer, weaker branches should be pruned when young to promote a stronger structure.

Pests and Potential Problems: No serious insect or disease problems. Fallen leaf stalks and pods require some clean up.

Environmental Concerns: The leaves, seeds and pulp are poisonous and are toxic to livestock, humans, and pets. Sprouts eaten in the spring have produced toxicosis. Leaves, young sprouts, and seeds with gelatinous matter around them contain the toxin. Cattle have reportedly died after drinking from pools of water contaminated by fallen leaves and seeds from the tree.

Control

Animals should not be allowed to graze woodland areas where Kentucky coffeetree grows or where it has been cut and allowed to sprout, until spring grasses and herbage are abundant. Sprouts can be grubbed periodically as a preventative measure as only a few of these trees will be found in any woodland. Fence in large fruiting trees to prevent livestock from eating the fallen pods. This measure is desirable over removing a species that is so rare in the landscape.

Cultivars, Improved, and Selected Materials (and area of origin): Several cultivars are available in the

nursery trade including selections that are predominately male such as 'Espresso', 'J.C. McDaniel' (Prairie Titan™), and 'Stately Manor', that produce no fruit. Espresso exhibits an upward, arching branch form resulting in an elm-like vase shape. Prairie Titan is a very symmetrical, upright spreading tree 60 to 70 feet tall with blue-green summer foliage, from the University of Illinois campus near Davenport Hall. Stately Manor is a narrow, upright form 50 feet tall and 20 feet wide, is possibly best for street tree use. 'Variegata' is a little known, slower growing cultivar with streaks of creamy white variegation and pink-purple new growth.

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For more information about this and other plants, please contact your local NRCS field office or Conservation District, and visit the PLANTS Web site <<http://plants.usda.gov>> or the Plant Materials Program Web site <<http://Plant-Materials.nrcs.usda.gov>>

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